CLAIMS

What is claimed is:

A method for removing aldehydes from a waste stream comprising the step of:

- a) contacting the waste stream containing the aldehyde with a solid primary amine thereby binding the aldehyde to the solid primary amine.
- 2. The method of claim 1, wherein the aldehyde comprises a dialdehyde.
- 3. The method of claim 2, wherein the aldehyde comprises glutaral dehyde.
- 4. The method of claim 2, wherein the dialdehyde comprises *ortho*-phthalaldehyde.
- 5. The method of claim 1, wherein the aldehyde comprises formaldehyde.
- 6. The method of claim 1, wherein the solid primary amine is a solid chemical comprises at least one primary amino group.
- 7. The method of claim 6 wherein the solid primary amine is in the form of an aminated surface having primary amine functionality.
- 8. The method of claim 7, wherein the aminated surface comprises the primary amine chemically bonded to a silica supporting material.
- 9. The method of claim 8 wherein the aminated surface is silica covalently bonded with an amino-silane.

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- 10. The method of claim 9 wherein the amino-silane is selected from the group consisting of 3-aminopropyltrimethoxysilane, 3-aminopropyltriethoxysilane, N-(2-aminoethyl)-3-aminopropyltriethoxy silane, and mixtures thereof.
- 11. The method of claim 8, wherein the aminated surface is derived from an epoxy-silane compound and an amine having at least two primary amine moieties.
- 12. The method of claim 11, wherein the epoxy-silane is selected from the group consisting of 3-glycidyloxypropyltrimethoxysilane and 2(3,4-epoxycyclohexyl)ethyltrimethoxysilane and mixtures thereof and the amine is hexamethylenediamine.
- 13. The method of claim 8, wherein the aminated surface is derived from isocyano-silane or isothiocyano-silane compounds and an amine having at least two primary amine moieties.
- 14. The method of claim 13, wherein the isocyano-silane or isothiocyano-silane is selected from the group consisting of (3-isocyanatopropyl)triethoxysilane, (3-isothiocyanatopropyl)trimethoxysilane, and mixtures thereof, and the amine is selected from the group consisting of diamines, triamines and dendrimer amines.
- 15. The method of claim 14, wherein the amine is hexamethylenediamine or tris(2-aminoethyl)amine.
- 16. The method of claim 7, wherein the aminated surface comprises synthetic or natural polymers having primary amine functionality.
- 17. The method of claim 16, wherein the aminated surface is a polymer comprising tris(2-aminoethyl)amine or diethylenetriamine.

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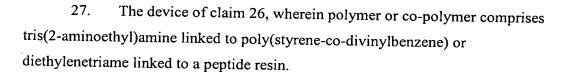
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- 18. The method of claim 17, wherein the polymer is poly(styrene-co-divinylbenzene) or a peptide resin.
- 19. The method of claim 16, wherein the aminated surfaces are selected from the group consisting of aminated polysaccharides, chitosan, and mixtures thereof.
- 20. The method of claim 19, wherein the aminated surface is aminated dextran.
- 21. The method of claim 7, wherein the aminated surface is silica-polyallyamine intercalate.
 - A device for removing aldehydes from a waste stream comprising:
 - a) a container with an inlet and an outlet; and
- b) a source of solid primary amine enclosed within the container, wherein the solid primary amine neutralizes and removes the aldehyde from the waste stream.
- 23. The device of claim 22, wherein the solid primary amine is a solid chemical comprising at least one primary amino group.
- 24. The device of claim 23, wherein the solid primary amine is in the form of an aminated surface having primary amine functionality.
- 25. The device of claim 23, wherein the aminated surface comprises the primary amine chemically bonded to a silica supporting material.
- 26. The device of claim 25, wherein the primary amine is a polymer or co-polymer comprising a primary amino group.

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- 28. The device of claim 24, wherein the aminated surfaces are selected from the group consisting of animated polysacharides, chitosan, and mixtures thereof.
- 29. The device of claim 24, wherein the aminated surface is silica-polyallyamine intercaclate.
- 30. The device of claim 24, wherein the aminated surface is aminated dextran.
- 31. The device of claim 22 further comprising a valve to control the flow of the waste stream.